Appl. No. 09/526,437; Filed: March 15, 2000
Dkt. No. 1488.0710005; Group Art Unit: 1647
Inventor(s): Greene *et al.*; Tel: 202/371-2600
Title: Antibodies to Human Tumor Necrosis Factor Receptor-Like Genes



```
      10                  30                  50
CGCCCAGCCGCCGCCTCCAAGCCCCTGAGGTTTCCGGGGACCACAATGAACAAGTTGCTG
                                                M  N  K  L  L
      70                  90                  110
TGCTGCGCGCTCGTGTTTCTGGACATCTCCATTAAGTGGACCACCCAGGAAACGTTTCCT
C  C  A  L  V  F  L  D  I  S  I  K  W  T  T  Q  E  T  F  P
      130                 150                 170
CCAAAGTACCTTCATTATGACGAAGAAACCTCTCATCAGCTGTTGTGTGACAAATGTCCT
P  K  Y  L  H  Y  D  E  E  T  S  H  Q  L  L  C  D  K  C  P
      190                 210                 230
CCTGGTACCTACCTAAAACAACACTGTACAGCAAAGTGGAAGACCGTGTGCGCCCCTTGC
P  G  T  Y  L  K  Q  H  C  T  A  K  W  K  T  V  C  A  P  C
      250                 270                 290
CCTGACCACTACTACACAGACAGCTGGCACACCAGTGACGAGTGTCTATACTGCAGCCCC
P  D  H  Y  Y  T  D  S  W  H  T  S  D  E  C  L  Y  C  S  P
      310                 330                 350
GTGTGCAAGGAGCTGCAGTACGTCAAGCAGGAGTGCAATCGCACCCACAACCGCGTGTGC
V  C  K  E  L  Q  Y  V  K  Q  E  C  N  R  T  H  N  R  V  C
      370                 390                 410
GAATGCAAGGAAGGGCGCTACCTTGAGATAGAGTTCTGCTTGAAACATAGGAGCTGCCCT
E  C  K  E  G  R  Y  L  E  I  E  F  C  L  K  H  R  S  C  P
      430                 450                 470
CCTGGATTTGGAGTGGTGCAAGCTGGAACCCCAGAGCGAAATACAGTTTGCAAAAGATGT
P  G  F  G  V  V  Q  A  G  T  P  E  R  N  T  V  C  K  R  C
      490                 510                 530
CCAGATGGGTTCTTCTCAAATGAGACGTCATCTAAAGCACCCTGTAGAAAACACACAAAT
P  D  G  F  F  S  N  E  T  S  S  K  A  P  C  R  K  H  T  N
      550                 570                 590
TGCAGTGTCTTTGGTCTCCTGCTAACTCAGAAAGGAAATGCAACACACGACAACATATGT
C  S  V  F  G  L  L  L  T  Q  K  G  N  A  T  H  D  N  I  C
      610                 630                 650
TCCGGAAACAGTGAATCAACTCAAAAATGTGGAATAGATGTTACCCTGTGTGAGGAGGCA
S  G  N  S  E  S  T  Q  K  C  G  I  D  V  T  L  C  E  E  A
      670                 690                 710
TTCTTCAGGTTTGCTGTTCCTACAAAGTTTACGCCTAACTGGCTTAGTGTCTTGGTAGAC
F  F  R  F  A  V  P  T  K  F  T  P  N  W  L  S  V  L  V  D
      730                 750                 770
AATTTGCCTGGCACCAAAGTAAACGCAGAGAGTGTAGAGAGGATAAAACGGCAACACAGC
N  L  P  G  T  K  V  N  A  E  S  V  E  R  I  K  R  Q  H  S
      790                 810                 830
TCACAAGAACAGACTTTCCAGCTGCTGAAGTTATGGAAACATCAAAACAAAGACCAAGAT
S  Q  E  Q  T  F  Q  L  L  K  L  W  K  H  Q  N  K  D  Q  D
```

FIG. 1A

Appl. No. 09/526,437; Filed: March 15, 2000
Dkt. No. 1488.0710005; Group Art Unit: 1647
Inventor(s): Greene *et al.*; Tel: 202/371-2600
Title: Antibodies to Human Tumor Necrosis Factor Receptor-Like Genes



```
     850                 870                 890
ATAGTCAAGAAGATCATCCAAGATATTGACCTCTGTGAAAACAGCGTGCAGCGGCACATT
I  V  K  K  I  I  Q  D  I  D  L  C  E  N  S  V  Q  R  H  I
     910                 930                 950
GGACATGCTAACCTCACCTTCGAGCAGCTTCGTAGCTTGATGGAAAGCTTACCGGGAAAG
G  H  A  N  L  T  F  E  Q  L  R  S  L  M  E  S  L  P  G  K
     970                 990                1010
AAAGTGGGAGCAGAAGACATTGAAAAAACAATAAAGGCATGCAAACCCAGTGACCAGATC
K  V  G  A  E  D  I  E  K  T  I  K  A  C  K  P  S  D  Q  I
    1030                1050                1070
CTGAAGCTGCTCAGTTTGTGGCGAATAAAAAATGGCGACCAAGACACCTTGAAGGGCCTA
L  K  L  L  S  L  W  R  I  K  N  G  D  Q  D  T  L  K  G  L
    1090                1110                1130
ATGCACGCACTAAAGCACTCAAAGACGTACCACTTTCCCAAAACTGTCACTCAGAGTCTA
```

FIG.1A1

Appl. No. 09/526,437; Filed: March 15, 2000
Pat. No. 1488.0710005; Group Art Unit: 1647
Inventor(s): Greene *et al.*; Tel: 202/371-2600
Title: Antibodies to Human Tumor Necrosis Factor Receptor Like Genes



```
M  H  A  L  K  H  S  K  T  Y  H  F  P  K  T  V  T  Q  S  L
     1150                1170                1190
AAGAAGACCATCAGGTTCCTTCACAGCTTCACAATGTACAAATTGTATCAGAAGTTATTT
K  K  T  I  R  F  L  H  S  F  T  M  Y  K  L  Y  Q  K  L  F
     1210                1230                1250
TTAGAAATGATAGGTAACCAGGTCCAATCAGTAAAAATAAGCTGCTTATAACTGGAAATG
L  E  M  I  G  N  Q  V  Q  S  V  K  I  S  C  L  *
     1270                1290                1310
GCCATTGAGCTGTTTCCTCACAATTGGCGAGATCCCATGGATGAGTAAACTGTTTCTCAG
     1330                1350                1370
GCACTTGAGGCTTTCAGTGATATCTTTCTCATTACCAGTGACTAATTTTGCCACAGGGTA
     1390                1410                1430
CTAAAAGAAACTATGATGTGGAGAAAGGACTAACATCTCCTCCAATAAACCCCAAATGGT
     1450                1470                1490
TAATCCAACTGTCAGATCTGGATCGTTATCTACTGACTATATTTTCCCTTATTACTGCTT
     1510
GCAGTAATTCAACTGGAAAAAAAAAAA
```

FIG.1B

Appl. No. 09/526,437; Filed: March 15, 2000
Dkt. No. 1488.0710005; Group Art Unit: 1647
Inventor(s): Greene *et al.*; Tel: 202/371-2600
Title: Antibodies to Human Tumor Necrosis Factor Receptor-Like Genes



```
        10                  30                  50
ATGAACAAGTTGCTGTGCTGCGCGCTCGTGTTTCTGGACATCTCCATTAAGTGGACCACC
M  N  K  L  L  C  C  A  L  V  F  L  D  I  S  I  K  W  T  T
        70                  90                  110
CAGGAAACGTTTCCTCCAAAGTACCTTCATTATGACGAAGAAACCTCTCATCAGCTGTTG
Q  E  T  F  P  P  K  Y  L  H  Y  D  E  E  T  S  H  Q  L  L
        130                 150                 170
TGTGACAAATGTCCTCCTGGTACCTACCTAAAACAACACTGTACAGCAAAGTGGAAGACC
C  D  K  C  P  P  G  T  Y  L  K  Q  H  C  T  A  K  W  K  T
        190                 210                 230
GTGTGCGCCCCTTGCCCTGACCACTACTACACAGACAGCTGGCACACCAGTGACGAGTGT
V  C  A  P  C  P  D  H  Y  Y  T  D  S  W  H  T  S  D  E  C
        250                 270                 290
CTATACTGCAGCCCCGTGTGCAAGGAGCTGCAGTACGTCAAGCAGGAGTGCAATCGCACC
L  Y  C  S  P  V  C  K  E  L  Q  Y  V  K  Q  E  C  N  R  T
        310                 330                 350
CACAACCGCGTGTGCGAATGCAAGGAAGGGCGCTACCTTGAGATAGAGTTCTGCTTGAAA
H  N  R  V  C  E  C  K  E  G  R  Y  L  E  I  E  F  C  L  K
        370                 390                 410
CATAGGAGCTGCCCTCCTGGATTTGGAGTGGTGCAAGCTGGAACCCCAGAGCGAAATACA
H  R  S  C  P  P  G  F  G  V  V  Q  A  G  T  P  E  R  N  T
        430                 450                 470
GTTTGCAAAAGATGTCCAGATGGGTTCTTCTCAAATGAGACGTCATCTAAAGCACCCTGT
V  C  K  R  C  P  D  G  F  F  S  N  E  T  S  S  K  A  P  C
        490                 510                 530
AGAAAACACACAAATTGCAGTGTCTTTGGTCTCCTGCTAACTCAGAAAGGAAATGCAACA
R  K  H  T  N  C  S  V  F  G  L  L  L  T  Q  K  G  N  A  T
        550                 570                 590
CACGACAACATATGTTCCGGAAACAGTGAATCAACTCAAAAATGTGGAATAGATGTTACC
H  D  N  I  C  S  G  N  S  E  S  T  Q  K  C  G  I  D  V  T
        610                 630                 650
CTGTGTGAGGAGGCATTCTTCAGGTTTGCTGTTCCTACAAAGTTTACGCCTAACTGGCTT
L  C  E  E  A  F  F  R  F  A  V  P  T  K  F  T  P  N  W  L
        670                 690                 710
AGTGTCTTGGTAGACAATTTGCCTGGCACCAAAGTAAACGCAGAGAGTGTAGAGAGGATA
S  V  L  V  D  N  L  P  G  T  K  V  N  A  E  S  V  E  R  I
        730                 750                 770
AAACGGCAACACAGCTCACAAGAACAGACTTTCCAGCTGCTGAAGTTATGGAAACATCAA
K  R  Q  H  S  S  Q  E  Q  T  F  Q  L  L  K  L  W  K  H  Q
        790                 810                 830
AACAAAGACCAAGATATAGTCAAGAAGATCATCCAAGATATTGACCTCTGTGAAAACAGC
N  K  D  Q  D  I  V  K  K  I  I  Q  D  I  D  L  C  E  N  S
```

FIG.2A

Appl. No. 09/526,437; Filed: March 15, 2000
Dkt. No. 1488.0710005; Group Art Unit: 1647
Inventor(s): Greene *et al.*; Tel: 202/371-2600
Title: Antibodies to Human Tumor Necrosis Factor Receptor-Like Genes



```
       850                 870                 890
GTGCAGCGGCACATTGGACATGCTAACCTCACCTTCGAGCAGCTTCGTAGCTTGATGGAA

V  Q  R  H  I  G  H  A  N  L  T  F  E  Q  L  R  S  L  M  E
       910                 930                 950
AGCTTACCGGGAAAGAAAGTGGGAGCAGAAGACATTGAAAAAACAATAAAGGCATGCAAA
S  L  P  G  K  K  V  G  A  E  D  I  E  K  T  I  K  A  C  K
       970                 990                1010
CCCAGTGACCAGATCCTGAAGCTGCTCAGTTTGTGGCGAATAAAAAATGGCGACCAAGAC
P  S  D  Q  I  L  K  L  L  S  L  W  R  I  K  N  G  D  Q  D
      1030                1050                1070
ACCTTGAAGGGCCTAATGCACGCACTAAAGCACTCAAAGACGTACCACTTTCCCAAAACT
T  L  K  G  L  M  H  A  L  K  H  S  K  T  Y  H  F  P  K  T
      1090                1110                1130
GTCACTCAGAGTCTAAAGAAGACCATCAGGTTCCTTCACAGCTTCACAATGTACAAATTG
V  T  Q  S  L  K  K  T  I  R  F  L  H  S  F  T  M  Y  K  L
      1150                1170
```

FIG.2A1

```
TATCAGAAGTTATTTTTAGAAATGATAGGTAATCTAGAAAAGATCTAA
Y  Q  K  L  F  L  E  M  I  G  N  L  E  K  I
```

FIG.2B

Appl. No. 09/526,437; Filed: March 15, 2000
Dkt. No. 1488.0710005; Group Art Unit: 1647
Inventor(s): Greene *et al.*; Tel: 202/371-2600
Title: Antibodies to Human Tumor Necrosis Factor Receptor Like Genes



```
  1 .....MNKLLCCALVFLDISIKWTTQETFPP.........KYLHYDEETS  36
          :   |..:| ::. .  :..| .|.|          :. .| ::|.
  1 MAPVAVWAALAVGLELWAAAHALPAQVAFTPYAPEPGSTCRLREYYDQTA  50

 37 HQLLCDKCPPGTYLKQHCTAKWKTVCAPCPDHYYTDSWHTSDECLYCSPV  86
     |: |.||.|| . |  || ...|||..|.|  ||: |:  .||| |:.
 51 .QMCCSKCSPGQHAKVFCTKTSDTVCDSCEDSTYTQLWNWVPECLSCGSR  99

 87 CKELQYVKQECNRTHNRVCECKEGRYLEIE......FCLKHRSCPPGFGV 130
     |.. |  .|.|.|.:||:|.|:.|:| .:.       :| . |.|.|||||
100 CSSDQVETQACTREQNRICTCRPGWYCALSKQEGCRLCAPLRKCRPGFGV 149

131 VQAGTPERNTVCKRCPDGFFSNETSSKAPCRKHTNCSVFGLLLTQKGNAT 180
     ..:||...:.|||.|:.| |||.|||.. ||.|  |.|.::    .|||.
150 ARPGTETSDVVCKPCAPGTFSNTTSSTDICRPHQICNVVAI....PGNAS 195

181 HDNIC.....................SGNSESTQKCGIDVTLCEEAFF... 207
     |.:|                      |..|: ||... . | ....|:
196 MDAVCTSTSPTRSMAPGAVHLPQPVSTRSQHTQPTPEPSTAPSTSFLLPM 245

208 ...........RFAVPTKFTPNWLSVLVDNLPGTKVNAESVERIKR.... 242
               ||:|. :...   . :: |  . ||.  :..:|:
246 GPSPPAEGSTGDFALPVGLIVG..VTALGLLIIGVVNCVIMTQVKKKPLC 293

243 .QHSSQEQTFQLLKLWKHQNKDQDIV.....KKIIQDIDLCENSVQRHIG 286
     |:... . :.  | :  |..:|: :     ..   .:: :...::|: .
294 LQREAKVPHLPADKARGTQGPEQQHLLITAPSSSSSSLESSASALDRRAP 343

287 HANLTFEQLRSLMESLPGK...KVGAEDIEKTIKACKPSDQILKLLSLWR 333
     | .  | .:: .| :|.   ..|..| ... .:.... .:  :: ..
344 TRNQP..QAPGVEASGAGEARASTGSSDSSPGGHGTQVNVTCIVNVCSSS 391

334 IKNGDQDTLKGLMHALKHSKTYHFPKTVTQSLKKTIRFLHS.....FTMY 378
     ..:: ..  :   : ..|.. . ||.  .:.|.   ::|      |:.
392 DHSSQCSSQASSTMGDTDSSPSESPKDEQVPFSKEECAFRSQLETPETLL 441

379 KLYQKLFLEMIGNQVQSVKISCL. 401
      :. |.: | . .::| '|  |
442 GSTEEKPLPL.GVPDAGMKPS... 461
```

FIG.3

Appl. No. 09/526,437; Filed: March 15, 2000
Dkt. No. 1488.0710005; Group Art Unit: 1647
Inventor(s): Greene *et al.*: Tel: 202/371-2600
Title: Antibodies to Human Tumor Necrosis Factor Receptor-Like Genes



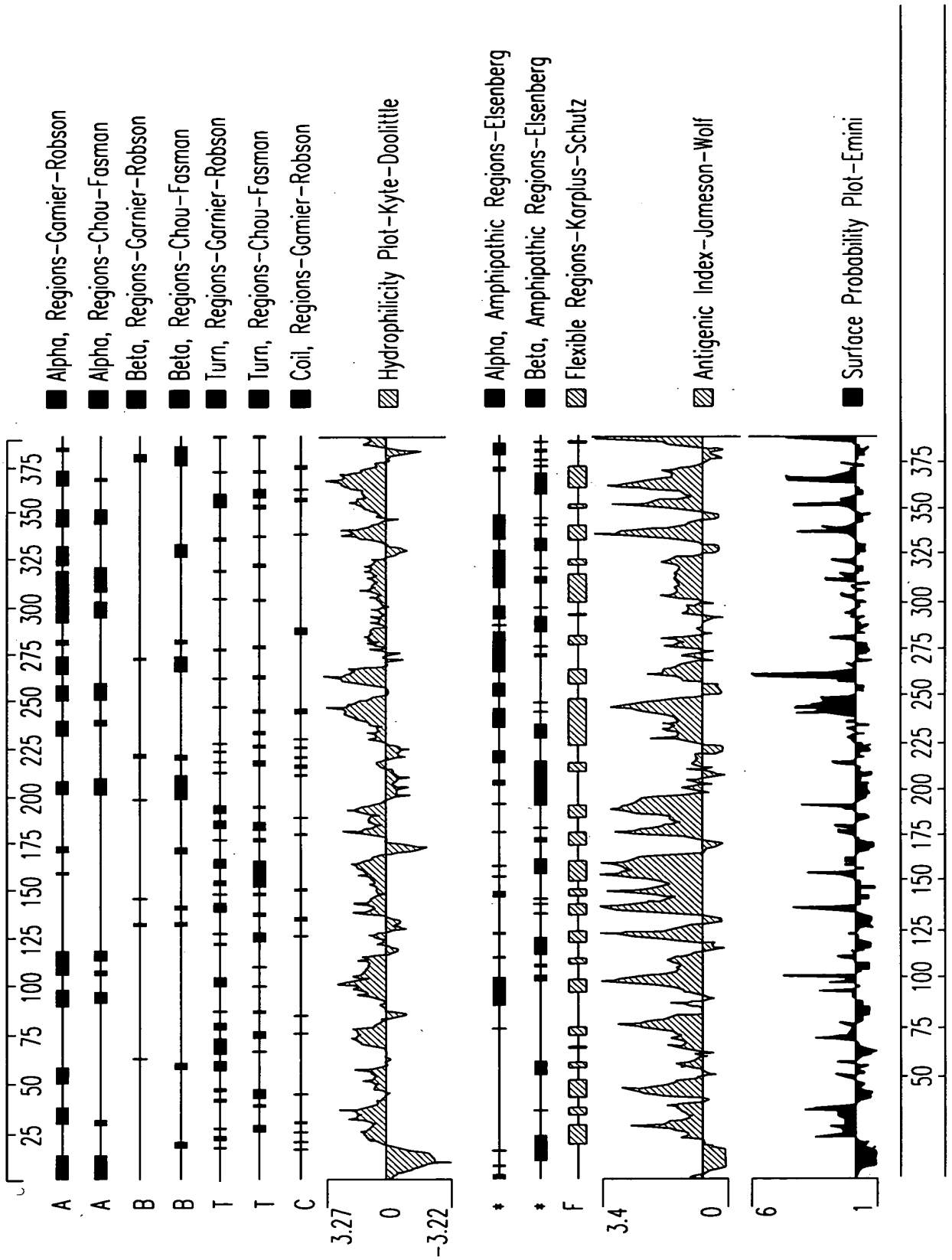


FIG.4

Appl. No. 09/526,437; Filed: March 15, 2000
Dkt. No. 1488.0710005; Group Art Unit: 1647
Inventor(s): Greene *et al.*; Tel: 202/371-2600
Title: Antibodies to Human Tumor Necrosis Factor Receptor-Like Genes



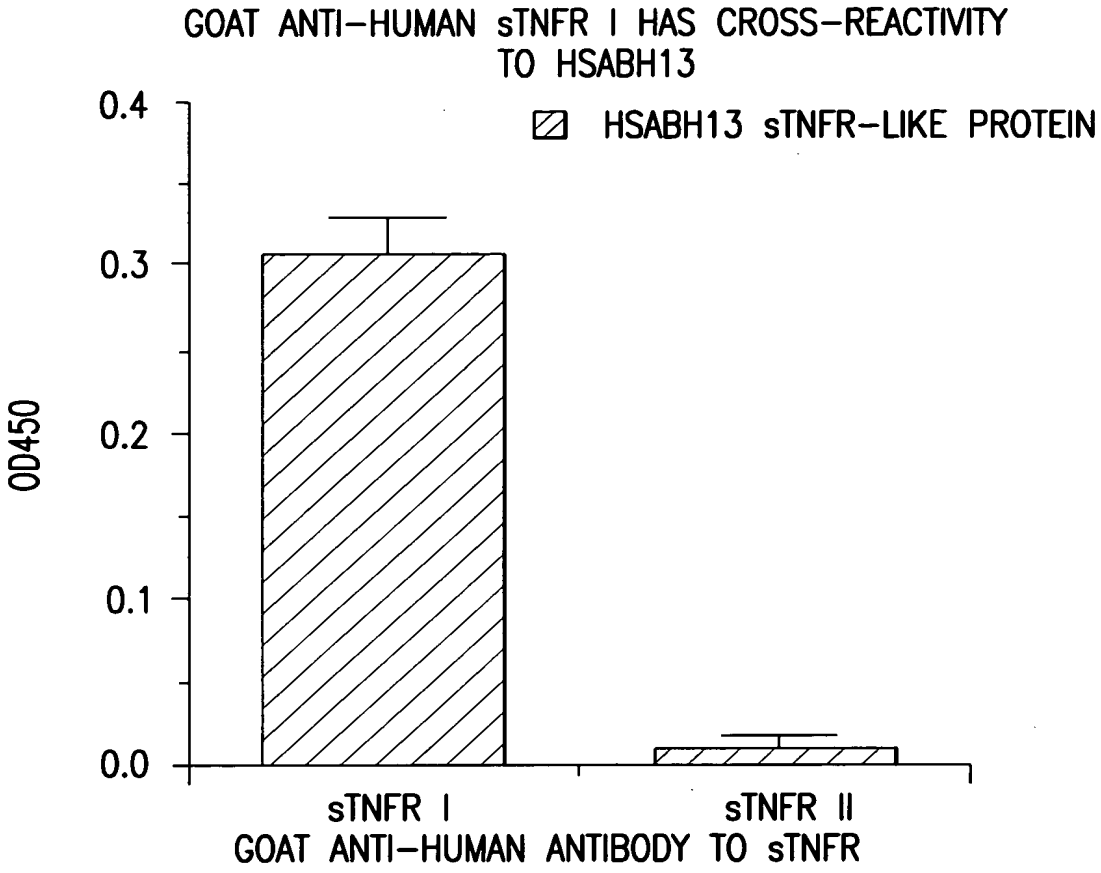


FIG.5

Appl. No. 09/526,437; Filed: March 15, 2000
Dkt. No. 1488.0710005; Group Art Unit: 1647
Inventor(s): Greene *et al.*; Tel: 202/371-2600
Title: Antibodies to Human Tumor Necrosis Factor Receptor Like Genes



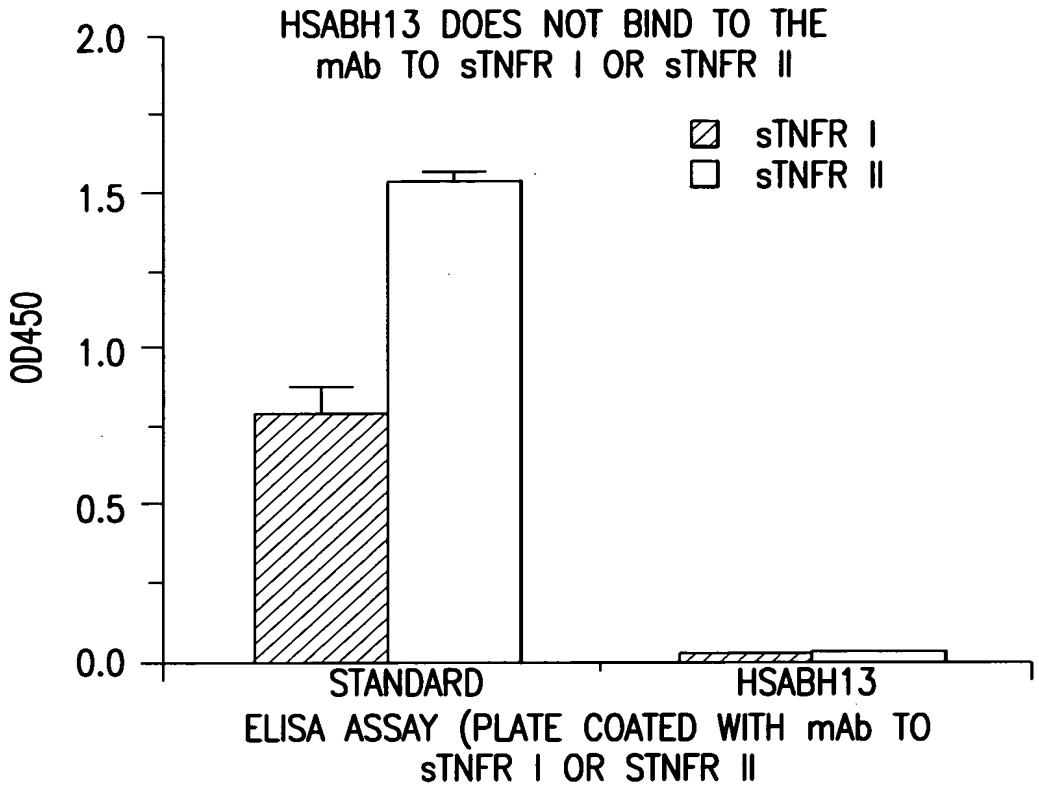


FIG.6

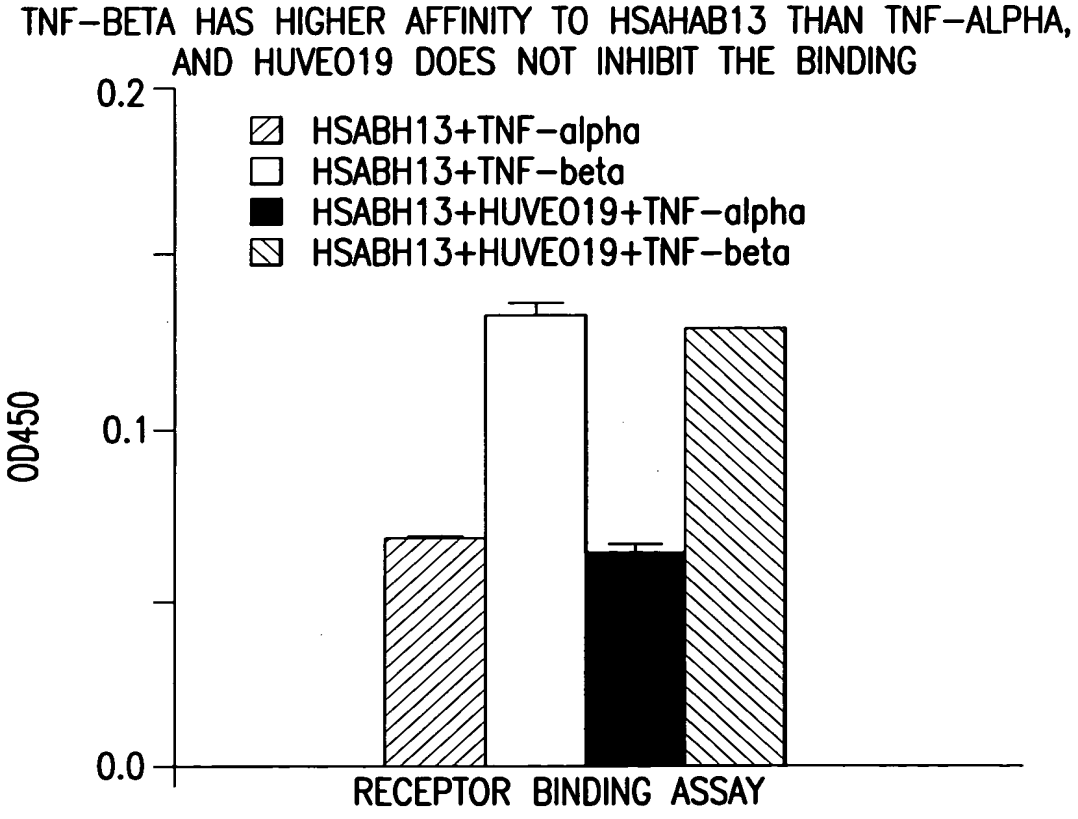


FIG.7

Appl. No. 09/526,437; Filed: March 15, 2000
Dkt. No. 1488.0710005; Group Art Unit: 1647
Inventor(s): Greene *et al.*; Tel: 202/371-2600
Title: Antibodies to Human Tumor Necrosis Factor Receptor-Like Genes



HSABH13 DOES NOT COMPETE WITH sTNFR I TO BIND TNF-ALPHA, MAY COMPETE WITH sTNFR II TO BIND TNF-ALPHA

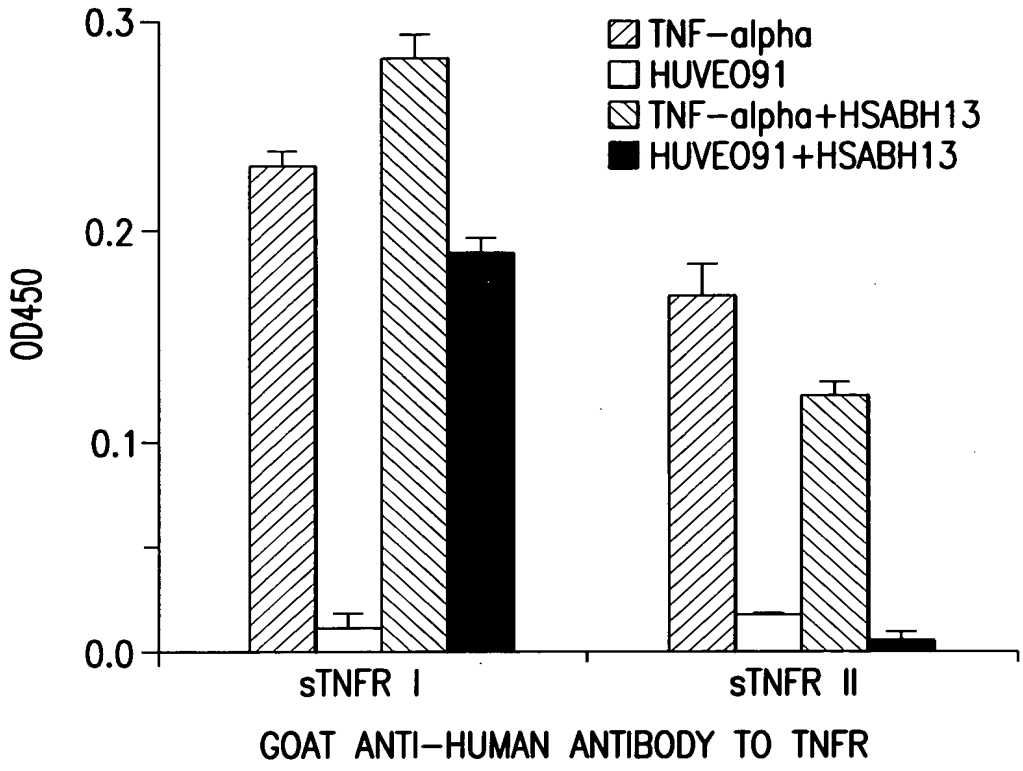


FIG.8

Appl. No. 09/526,437; Filed: March 15, 2000
Dkt. No. 1488.0710005; Group Art Unit: 1647
Inventor(s): Greene *et al.*; Tel: 202/371-2600
Title: Antibodies to Human Tumor Necrosis Factor Receptor-Like Genes



TITER OF RABBIT #11509 TESTED AGAINST
TNFr BATCH HG02900-1-B

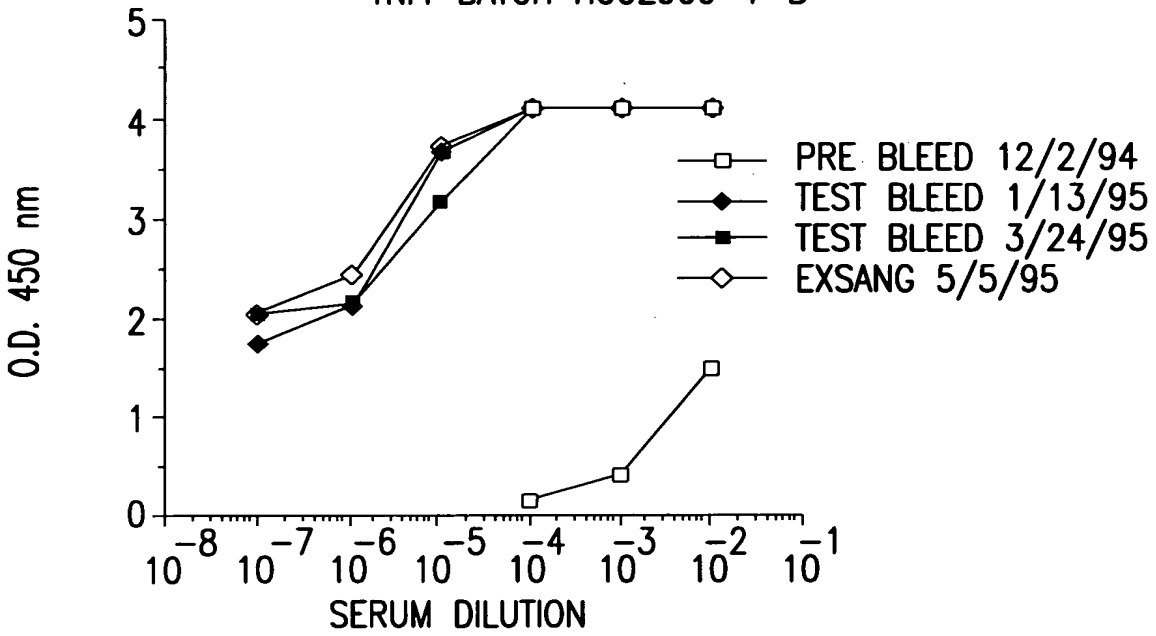


FIG.9A

TITER OF RABBIT #11508 TESTED AGAINST
TNFr BATCH HG02900-1-B

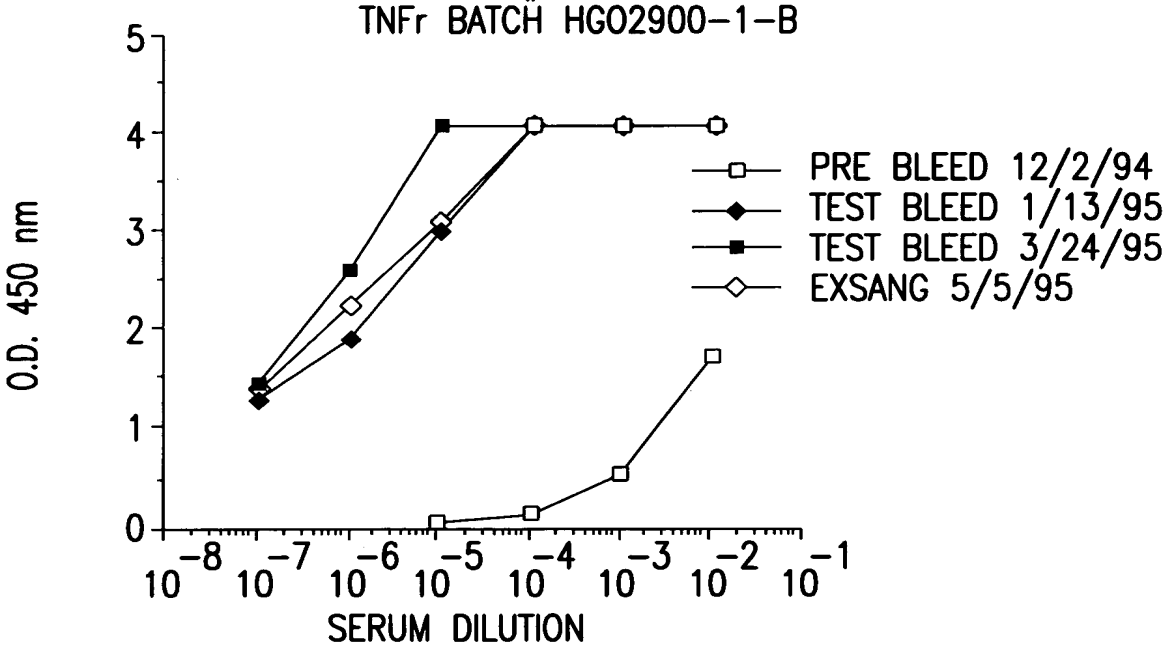


FIG.9B